

EVERGREEN WATER COMPANY (PWSNO 1050010)
SOURCE WATER ASSESSMENT REPORT

February 26, 2003



State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This risk assessment is based on a land use inventory in the well recharge zone, sensitivity factors associated with how the well was constructed, and aquifer characteristics.

This report, *Source Water Assessment for the Evergreen Water Company*, describes the public drinking water well; the well recharge zone and potential contaminant sites located inside the recharge zone boundaries. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this public water system. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

Evergreen Water Company is located next to Highway 3 about 1.5 miles southeast of St Maries, Idaho. The primary source of drinking water for the system is a 590-foot deep well that supplies 150 gallons per minute. The company also owns a new well, drilled in 1997, but not currently in use and two wells drilled in 1978. One of the old wells is no longer used as a back up supply because of high levels of iron and manganese in the water that give it an unpleasant taste, odor and color. The water system serves a population of 80.

A ground water susceptibility analysis conducted by the Idaho Department of Environmental Quality on January 31, 2003 ranked the main well at moderate risk relative to all classes of regulated contaminants. Unknown risks associated with the construction of the well and local geology added the most points to the final susceptibility scores. The old back-up wells have a low risk of contamination. Though these wells are relatively shallow, their casings and surface seals extend into solid basalt. The new well ranked moderately susceptible to contamination. It is shallow and was drilled in an area where the basalt is extensively fractured, providing pathways into the ground water for surface contaminants to follow. Surface water from small streams, a source of microbial contamination that could effect the shallow wells, is the only potential source of contaminants documented in the well recharge zone.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Evergreen Water Company already has some important drinking water protections in place. The wells are located on the hillside above the subdivision where they are safe from the kinds of household activities that can potentially contaminant ground water. The water system is well maintained. Water quality monitoring is up to date. The system is fortunate to have more than one well, ensuring an adequate water supply for present and future needs. In addition to continuing to operate and maintain the system in compliance with the Idaho Rules for Public Drinking Water Systems, Evergreen can protect its drinking water by working to maintain the undeveloped nature of its well recharge zone.

SOURCE WATER ASSESSMENT FOR EVERGREEN WATER COMPANY

Section 1. Introduction - Basis for Assessment

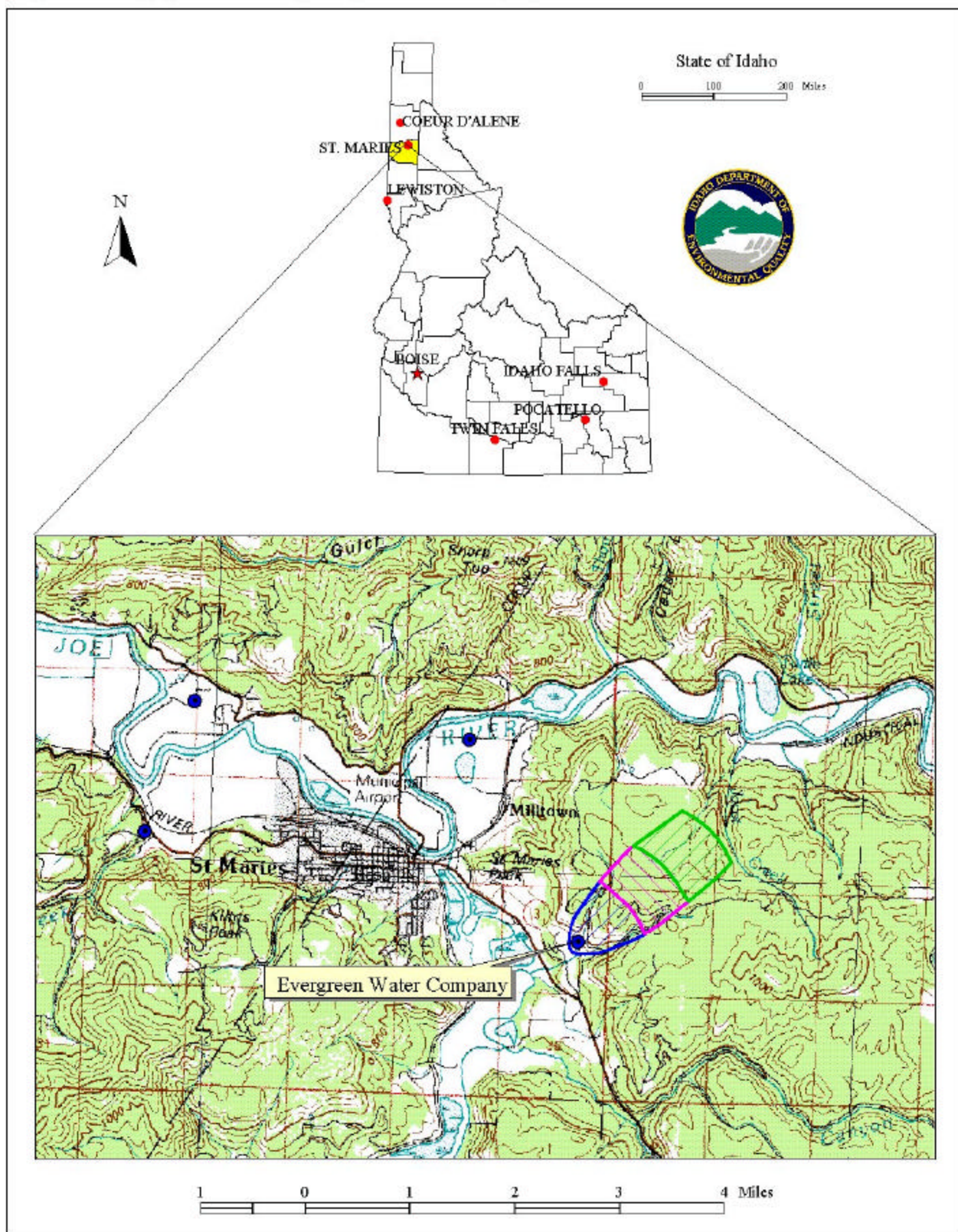
The following sections contain information necessary for understanding how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and an inventory of significant potential sources of contamination identified within that area are included. The ground water Susceptibility Analysis Worksheet used to develop this assessment is attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess every public drinking water source in Idaho for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. These assessments are based on a land use inventory inside the delineated recharge zones, sensitivity factors associated with how the well is constructed, and aquifer characteristics. The state must complete more than 2900 assessments by May of 2003. Because resources and the time available to accomplish assessments are limited, an in-depth, site-specific investigation for every public water system is not possible.

The results of the source water assessment should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system. The ultimate goal of this assessment is to provide data to local communities for developing a protection strategy for their drinking water supply. The Idaho Department of Environmental Quality recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Figure 1. Geographic Location of Evergreen Water Company



Section 2. Preparing for the Assessment

Defining the Zones of Contribution - Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the well recharge area into time of travel zones indicating the number of years necessary for a particle of water flowing through the aquifer to reach a well. DEQ used a refined computer model approved by the EPA to determine the extent of the recharge zone and to divide it into time of travel (TOT) zones. The computer model used data assimilated by DEQ from a variety of sources including local well logs.

Evergreen Water Company operates a community water system serving a subdivision located on Highway 3 about a mile and a half southeast of St Maries, Idaho. (Figure 1). A 590-foot deep well, capable of producing about 150 gallons per minute, supplies water to a population of 80. The system also owns two wells that were drilled in 1978 and a well drilled in 1997 that has not been connected to the distribution system yet. These wells are 120 to 160 feet deep. All four wells are close together and constitute a wellfield drawing from different strata of a common aquifer.

The ground water flow model WhAEM2000 was used to delineate 3-, 6-, and 10-year capture zones for the Evergreen wellfield.

Initial estimates of hydraulic conductivity and aquifer thickness were based on well logs and specific capacity data. The initial estimates of model parameters and boundaries were adjusted as necessary to best replicate observed water-level measurements. Because of the inherent uncertainty in ground water modeling the input parameters were varied to evaluate the effect on capture zone geometry. In some cases, the final capture zone was a composite of the various simulations run for each model.

With the wellfield located along a tributary to the St. Maries River and drilled into a basalt formation, the choice was made to set the no flow boundary at the surface expression of the basalt. This coincides closely with the watershed of the tributary. Few local well logs were available to use to constrain the water table or to provide test points for simulations for Evergreen Water Company. There was one nearby well that had a specific capacity test. Hydraulic conductivity was varied from 3 to 5 feet per day, the aquifer thickness was varied from 24 to 50 feet, porosity was set at 0.1, and recharge varied from 1.75 to 2.2 inches per year.

The recharge zone delineated for the Evergreen Water Company wells encompasses about 685 acres divided into 0 to 3 and 3 to 6 year time of travel zones (Figure 2). The primary direction of ground water flow is from the northeast to southwest.

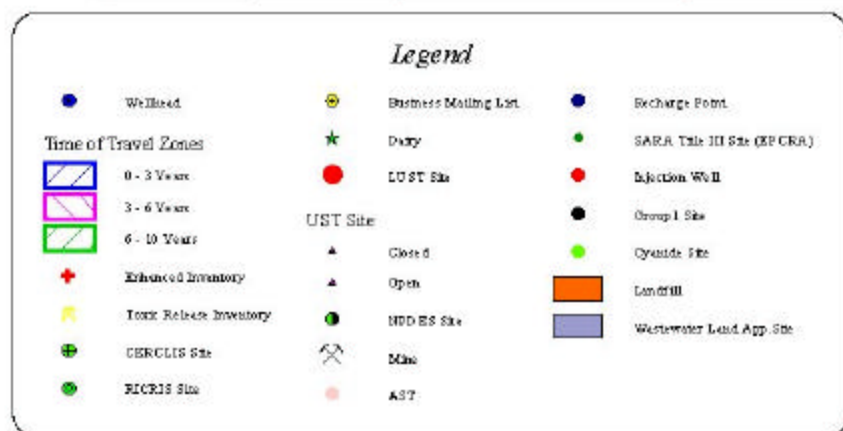
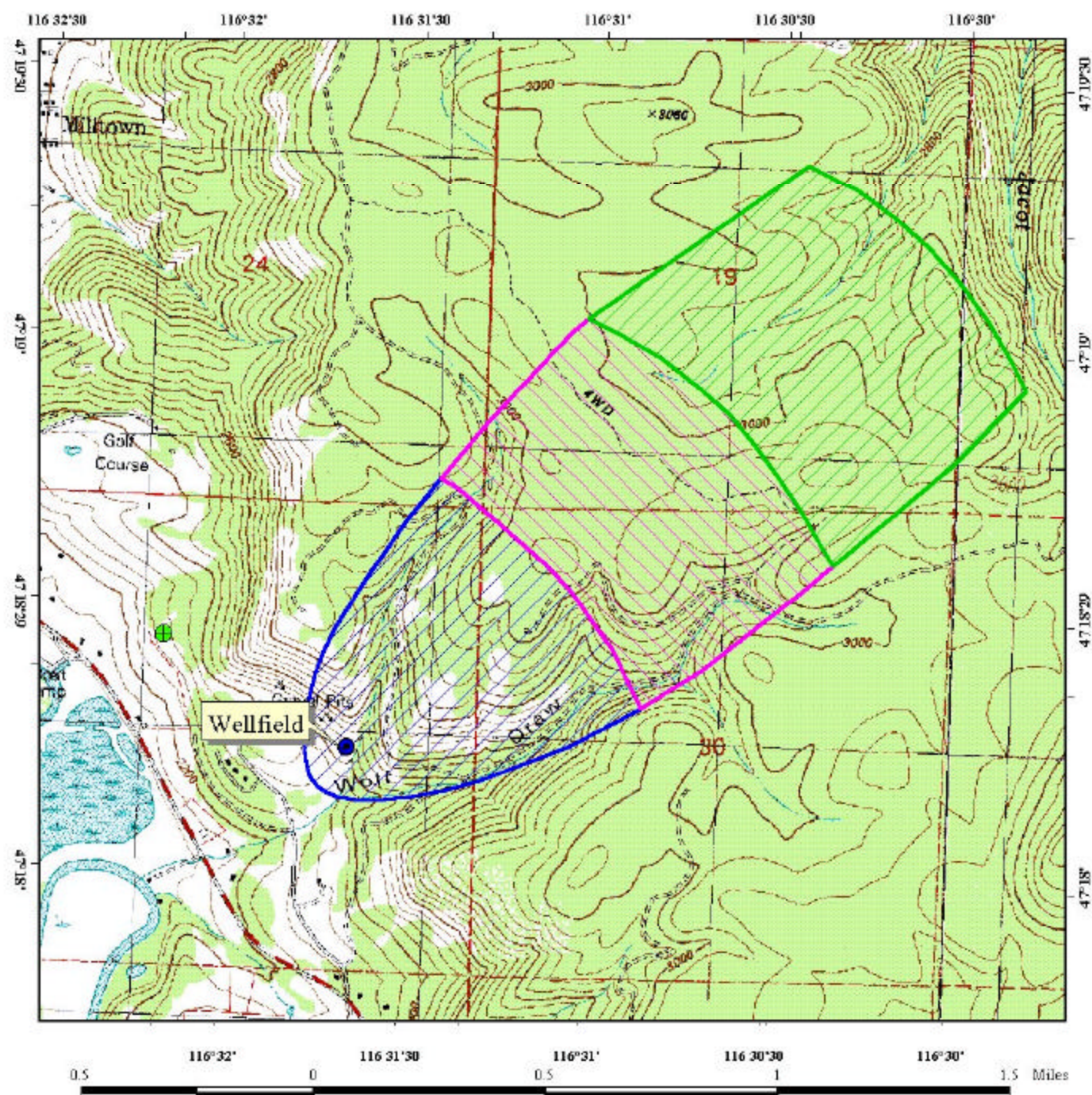
Identifying Potential Sources of Contamination

The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. Inventories for all public water systems in Idaho were conducted in two-phases. The first phase involved identifying and documenting potential contaminant sources within a system's source water assessment area through the use of computer databases and Geographic Information System maps developed by DEQ. Maps showing the delineations and tables summarizing the results of the database search were then sent to system operators for review and correction during the second or enhanced phase of the inventory process. Information from the public water system file was also incorporated into the potential contaminant inventory.

Figure 2, *Evergreen Water Company Delineation and Potential Contaminant Inventory* on page 7 of this report shows the location of the well, the zone of contribution DEQ delineated for it, and potential contaminant sites in the vicinity. Undeveloped forest is the predominant land inside the recharge zone.

Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. When a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation.

Figure 2. Evergreen Water Company Delineation and Potential Contaminant Inventory.



PWS # 1050010
Evergreen Water Company
Wellfield

Section 3. Susceptibility Analysis

The susceptibility to contamination of all ground water sources in Idaho is being assessed on the following factors:

- physical integrity of the well,
- hydrologic characteristics,
- land use characteristics, and potentially significant contaminant sources
- historic water quality

The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. A high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking. The Susceptibility Analysis Worksheet for the Evergreen Water Company well, Attachment A, shows in detail how the well was scored.

Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. Lower scores imply a well that can better protect the water. This portion of the susceptibility analysis relies on information from individual well logs and from the most recent sanitary survey of the public water system. The water system was in compliance with *Idaho Rules for Public Drinking Water Systems* when it was inspected in 2002. No deficiencies in wellhead or surface seal maintenance were noted. The driller's report for the Evergreen Water Company Well #1 is not available. Well logs for Wells #2 through #4 are on file with DEQ.

Well #1, the primary source for the Evergreen Water Company, is reportedly 590 feet deep with a 6-inch steel casing. The pumping level is about 340 feet below the surface with the static water level at 290 feet. No other construction details are available. An injection hypochlorinator on the discharge line from Well #1 disinfects water from the primary source prior to storage and distribution. A site inspection and records review in February 2001 determined that Well #1 is ground water without surface water influence.

Descriptions of Wells #2 and #3 in sanitary surveys conflict with information on the well logs. These wells are used as back up sources. One of them produces good quality water. The other is known to yield water with elevated concentrations of iron and manganese that impart unaesthetic taste odor and color.

Well #2, drilled in 1978, is 160 feet deep. It has a 6-inch steel casing that extends to a depth of 20 feet where it terminates in basalt. The remaining depth of the well is apparently free standing in a basalt formation with a clay interbed between 80 and 110 feet. The surface seal is 20 feet deep. The well log reports the static water 85 feet below land surface. With a pump set at 140 feet, the discharge from the well was 12 gallons per minute at the time of drilling.

Well #3, also drilled in 1978, is 120 feet deep and is cased and sealed to 20 feet. At this site, 10 feet of broken rock cover 55 feet of solid basalt, then fractured basalt to the bottom of the well. The static water level is 65 feet below land surface. With the pump set at 110 feet, the well produced 15 gallons per minute. Except for minor differences in the casing wall thickness and the height of the casing above finished grade, Wells #2 and #3 were constructed to current standards.

Well #4 was drilled in 1997 to provide for future needs. Air testing at the time of drilling indicates a yield of 1000 gallons per minute according to the well log. Well #4 is 126 feet deep and cased from the surface to its full depth. Current Idaho Department of Water Resources well construction standards specify a minimum 18-inch extension above finished grade. The 12-inch diameter steel casing has a wall thickness of 0.375 inches. It is perforated from 100 to 126 feet below the surface. The bentonite well seal is 70 feet deep. Static water level is 14 feet below ground. Wells #2, #3 and #4 have not been evaluated for possible surface water influence.

Hydrologic Sensitivity

Hydrologic sensitivity scores reflect natural geologic conditions at the well site and in the recharge zone. Information for this part of the analysis is derived from individual well logs and from the soil drainage classification inside the delineation boundaries. The Evergreen Water Company Wells #2 and #3 scored 3 points out of 6 points possible in the hydrologic sensitivity portion of the susceptibility analysis. Wells #1 and #4 scored 4 points.

Soils in the recharge zone are predominately poorly to moderately well drained. Soils in these drainage classes are deemed more protective of ground water than quickly draining soils. The well logs for Wells #2 and #3 show solid basalt as the predominant material above the water table. Soil composition above the water table in Well #1 is not known since the well log is unavailable. The drillers's report for Well #4 shows extensive fracturing and water in every stratum. The cumulative thickness of the clay found in Wells # 2 and #4 is less than 50 feet.

Potential Contaminant Sources and Land Use

Figure 2, *Evergreen Water Company Delineation and Potential Contaminant Inventory* on page 7 shows the location of the Evergreen Water Company wellfield, and the recharge zone DEQ delineated for it. The wells are situated on the hillside above the subdivision. Land inside the recharge zone is mostly wooded with a few forest roads crossing the delineation boundaries. A seasonal creek is about 200 feet east of the wells. No other potential contaminant sources are documented in the vicinity.

Historic Water Quality

Evergreen Water Company has had few water quality problems other than elevated concentrations of iron and manganese in one of the back up wells. In the period from January 1998 through January 2003 only one routine monthly sample tested positive for total coliform bacteria. Follow up samples were negative. Except as noted, sampling results on the table below are for Well #1 or the distribution system. No water quality test results are available for Well #4. The well must be tested for coliform bacteria, corrosivity, radiochemical constituents, inorganic, synthetic and volatile organic chemicals before it is put into use.

Table 1. Evergreen Water Company Chemical Sampling Results

Primary IOC Contaminants (Mandatory Tests)							
Contaminant	MCL (mg/l)	Results (mg/l)	Dates	Contaminant	MCL (mg/l)	Results (mg/l)	Dates
Antimony	0.006	*ND	12/19/95, 12/20/98, 10/29/01	Nitrate Well #1	10	ND to 1.12	5/30/80 through 12/26/02
				Well #2		ND	12/26/02
Arsenic	0.01	ND	5/30/80 through 10/29/01	Nickel	N/A	ND	12/19/95, 12/20/98, 10/29/01
Barium	2.0	ND to 0.154	5/30/80 through 10/29/01	Selenium	0.05	ND	5/30/80 through 12/26/02
Beryllium	0.004	ND	12/19/95, 12/20/98, 10/29/01	Sodium	N/A	7.0 to 14.3	3/11/85 through 10/29/01
Cadmium	0.005	ND	5/30/80 through 10/29/01	Thallium	0.002	ND	12/19/95, 12/20/98, 10/29/01
Chromium	0.1	ND	5/30/80 through 10/29/01	Cyanide	0.02	ND	12/19/95
Mercury	0.002	ND	5/30/80 through 10/29/01	Fluoride	4.0	ND to 0.29	5/30/80 through 10/29/01
Secondary and Other IOC Contaminants (Optional Tests)							
Contaminant	Recommended Maximum (mg/l)	Results (mg/l)			Dates		
Sulfate	250 mg/l	5.0 to 6.32			11/25/80, 12/19/95, 12/20/98		
Iron (Back up Well)	0.3 mg/l	3.0			10/11/89		
Manganese (Back up Well)	0.05 mg/L	0.15			10/11/89		
Regulated and Unregulated Synthetic Organic Chemicals							
Contaminant			Results		Dates		
29 Regulated and 13 Unregulated Synthetic Organic Compounds			None Detected		12/10/95, 12/17/01		
Regulated and Unregulated Volatile Organic Chemicals							
Contaminant				Results		Dates	
21 Regulated & 16 Unregulated Volatile Organic Compounds				None Detected		12/19/95, 10/29/01	
Radiological Contaminants							
Contaminant		MCL	Results		Dates		
Gross Alpha, Including Ra & U		15 pC/l	0.2 to 3.0 pC/l		4/14/81 to 1/9/01		
Gross Beta Particle Activity		4 mrem/year 50 pC/l	2.3 to 3.3 mrem 6 pC/l		4/14/81 to 12/19/96 1/9/01		

*ND = not detected

Final Susceptibility Ranking

The Evergreen Water Company Well #1 ranked moderately susceptible to all classes of regulated contaminants. Unknown risks associated with well construction and well site geology added the most points to the final scores. Wells #2 and #3 are at low risk. The wells are shallow, but are somewhat protected since their casings and surface seals extend into consolidated material. Well #4 is in the moderate risk category. 3 of the 8 points marked against the well in the susceptibility analysis derive from the well's location in an area where the basalt is broken, making the ground water more vulnerable to the contaminants transported from the surface. The scores and ranking for each well are summarized in Table 2. Complete susceptibility worksheets are in Attachment A.

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score =
Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
- 2) Microbial Final Score =
Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

The final ranking categories are as follows:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

Table 2. Summary of Evergreen Water Company Susceptibility Evaluation

Cumulative Susceptibility Scores						
Well Name	System Construction 0-6 possible	Hydrologic Sensitivity 0-6 possible	Contaminant Inventory plus Land Use			
			IOC 0-30 possible	VOC 0-30 possible	SOC 0-30 possible	Microbial 0-14 possible
Well #1	4	4	0	0	0	0
Well #2	1	3	0	0	0	2
Well #3-	1	3	0	0	0	2
Well #4	4	4	0	0	0	2
Final Susceptibility Scores/Ranking						
Well Name	IOC 0-18 possible	VOC 0-18 possible	SOC 0-18 possible	Microbial 0-15 possible		
Well #1	8/Moderate	8/Moderate	8/Moderate	8/Moderate		
Well #2	4/Low	4/Low	4/Low	5/Low		
Well #3-	4/Low	4/Low	4/Low	5/Low		
Well #4	8/Moderate	8/Moderate	8/Moderate	9/Moderate		

Low numbers are favorable because high scores indicate increased susceptibility to contaminants

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Evergreen Water Company already has some important drinking water protections in place. The wells are located on the hillside above the subdivision where they are safe from the kinds of household activities that can potentially contaminant ground water. The water system is well maintained. Water quality monitoring is up to date.

The system should stay informed about any proposed land use changes in the well recharge zone. Retaining an undeveloped recharge zone is to the system's advantage. Checking the recharge zone for illegal dumping off forest roads should be undertaken periodically. A voluntary measure every system should implement is development of a water emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website to guide systems through the process.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments. Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001 for assistance with drinking water protection strategies.

Idaho Department of Environmental Quality

Coeur d'Alene Regional IDEQ Office
State IDEQ Office, Boise
Website:

(208) 769-1422
(208) 373-0502
<http://www.deq.state.id.us/>

Idaho Rural Water Association

Melinda Harper, Groundwater Protection Specialist
Website:

(800) 962-3257
<http://www.idahoruralwater.com>

Idaho Association of Soil Conservation Associations

Water quality and soil conservation
Website:

(208) 338-5900
<http://www.iascd.state.id.us/>

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Agriculture, 1998. Unpublished Data.

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Idaho Department of Environmental Quality, 2002. Coeur d'Alene Regional Office Technical Services Delineations Draft Report.

Attachment A

Evergreen Water Company Susceptibility Analysis Worksheets

Ground Water Susceptibility

Public Water System Name : **EVERGREEN WATER COMPANY**

Source: **WELL #1**

Public Water System Number : **1050010**

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1. System Construction		SCORE			
Drill Date	1981				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 2002				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	UNKNOWN	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	0
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		0	0	0	0
4. Final Susceptibility Source Score		8	8	8	8
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility

Public Water System Name : **EVERGREEN WATER COMPANY**

Source: **WELL #2**

Public Water System Number : **1050010**

1/31/03 10:35:10 AM

1. System Construction		SCORE			
Drill Date	9/1/78				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2002				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		1			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		3			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	YES Surface Water	0	0	0	1
(Score = # Sources X 2) 8 Points Maximum		0	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	2
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		0	0	0	2
4. Final Susceptibility Source Score		4	4	4	5
5. Final Well Ranking		Low	Low	Low	Low

Ground Water Susceptibility

Public Water System Name : **EVERGREEN WATER COMPANY**

Source: **WELL #3**

Public Water System Number : **1050010**

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1. System Construction		SCORE			
Drill Date	1978				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2002				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		1			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		3			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Zone 1A	WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	YES Surface Water	0	0	0	1
(Score = # Sources X 2) 8 Points Maximum		0	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	YES	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	2
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		0	0	0	2
4. Final Susceptibility Source Score		4	4	4	5
5. Final Well Ranking		Low	Low	Low	Low

Ground Water Susceptibility

Public Water System Name : **EVERGREEN WATER COMPANY**

Source: **WELL #4**

Public Water System Number : **1050010**

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1. System Construction		SCORE			
Drill Date	8/97				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2002				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)					
Contaminant sources present (Number of Sources)	YES Surface Water	0	0	0	1
(Score = # Sources X 2) 8 Points Maximum		0	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0	2
Potential Contaminant / Land Use - ZONE II (6 YR. TOT)					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0
Potential Contaminant / Land Use - ZONE III (10 YR. TOT)					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		0	0	0	2
4. Final Susceptibility Source Score		8	8	8	9
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.